



CHEMISTRY NMDCAT

(UNIT-1)

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SAEED MDCAT TEAM

TOPICS

✓ INTRODUCTION TO FUNDAMENTAL CONCEPTS OF CHEMISTRY

Q.1 When 1 mole of NaCl is dissolved in water, it produces Na^+ ions equal to

- a. 6.023×10^{22}
- b. 6.023×10^{23}
- c. 3.01×10^{23}
- d. 1.2×10^{24}

Q.2 Methanol burns according to following equation



If 3.50 moles of methanol are burnt in oxygen, then how many moles of water are produced

- a. 4.5 moles
- b. 5.25 moles
- c. 7 moles
- d. 6 moles

Q.3 NH_3 is an important raw material in the manufacture of fertilizers. It is obtained by the combination of N_2 and H_2 . How many moles of N_2 are required to manufacture 5 moles of NH_3 .

- a. 5 moles
- b. 2 moles
- c. 1.5 moles
- d. 2.5 moles

Q.4 The number of moles of O_2 produced by thermal decomposition of 490 g of KClO_3 by following equation are



- a. 2 moles
- b. 4 moles
- c. 5 moles
- d. 6 moles

Q.5 How many moles of oxygen molecules are there in 89.656 dm^3 of oxygen gas at S.T.P

- a. 3 moles
- b. 4 moles
- c. 4.5 moles
- d. 5 moles

Q.6 The reactant left un-used after completion of reaction is known as

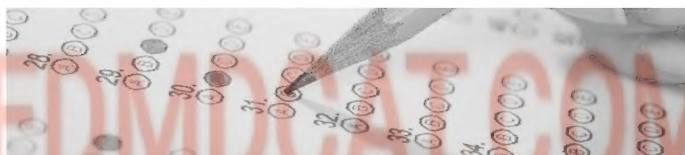
- a. Reactant in excess
- b. Non limiting reactant
- c. Limiting reactant
- d. Both "a" and "b"

Q.7 How many number of moles of hydrogen atoms are present in 18g H_2O

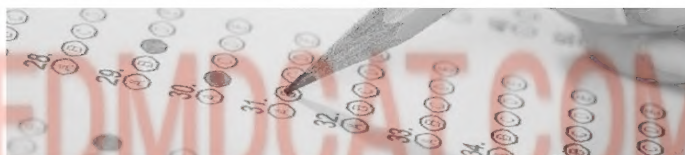
- a. 1 mole
- b. 2 mole
- c. 0.5 mole
- d. 3 mole

Q.8 The quantity of a product that is actually produced in a chemical reaction is called the _____

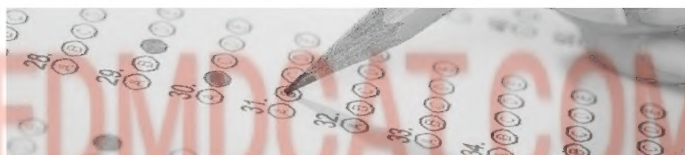
- a. Theoretical yield
- b. Expected yield
- c. Actual yield
- d. %age yield



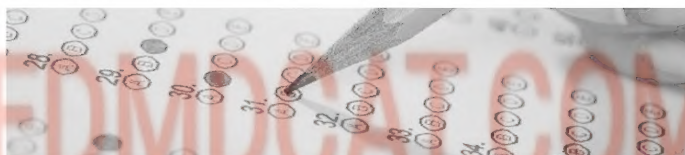
- Q.9 25g lime stone (CaCO_3) is heated to give 10g CaO in a chemical reaction. What will be the %age yield of this reaction?
- $\text{CaCO}_3 \xrightarrow{\text{heat}} \text{CaO} + \text{CO}_2$ (mol.mass of $\text{CaCO}_3 = 100\text{gmol}^{-1}$)
- a. 75% b. 40%
c. 56% d. 71%
- Q.10 The actual yield may be less than the theoretical yield due which of the following reason
- a. Side reactions may produce by –products
b. Some reactions are reversible
c. Mechanical loss takes place due to filtration and distillation
d. All of these
- Q.11 22g of gas “X” occupies 11.207dm^3 volume at STP. The gas “X” will be
- a. CO b. NO_2
c. CO_2 d. CH_4
- Q.12 Which of the following terms is used for 18g H_2O ?
- a. g-atom b. g-ions
c. g-formula unit d. g-molecule
- Q.13 Mass of water in 1000 moles of ice is
- a. 0.18 Kg b. 180 Kg
c. 1.8 Kg d. 18 Kg
- Q.14 A piece of diamond embedded in a gold ring weighs 600mg. How many number of moles of carbon does it contain?
- a. 0.5 mole b. 0.05 mole
c. 0.005 mole d. 0.1 mole
- Q.15 Which concentration of solution is temperature dependent
- a. Molarity b. Mole fraction
c. Molality d. % w/w
- Q.16 One mole of hydrogen gas can occupy 22.414 dm^3 volume at
- a. 273K and one atm pressrue b. 298K and one atm pressrue
c. 273K and 0.5 atm pressrue d. 298K and 0.1atm pressrue
- Q.17 The CaCO_3 has 100 amu. This is called its
- a. Atomic mass b. Molecular mass
c. Isotopic mass d. Formula mass
- Q.18 Number of water molecules in 10g of ice are
- a. 3.34×10^{22} b. 3.34×10^{23}
c. 5.5×10^{23} d. 6.02×10^{23}
- Q.19 If the mole fraction of one component in a binary solution is 0.1, then mole fraction of other component may be
- a. Equal to 0.1 b. Less than 0.1
c. Greater than 0.1 d. Greater than 1.0
- Q.20 The volume occupied by 7.1 g of chlorine gas at S.T.P is
- a. 2.24 dm^3 b. 1.12 dm^3
c. 4.48 dm^3 d. 3.36 dm^3



- Q.21** Number of moles of CO_2 which contains 24g oxygen is
a. 1.0 mole
b. 0.25mole
c. 0.50 mole
d. 0.75 mole
- Q.22** Complete oxidation (combustion) of one mole of an organic compound requires three mole of oxygen gas. The formula of the organic compound will be
a. CH_3CH_3
b. CH_3OH
c. $\text{CH}_3\text{CH}_2\text{OH}$
d. CH_3COOH
- Q.23** A balanced chemical equation tells us about the
a. Conditions of the reaction
b. Quantitative relationship between reactants and products
c. Rate of the reaction
d. Odour of the reactants and products
- Q.24** A limiting reactant is the one which
a. Is taken in lesser quantity in volume as compared to the other reactants
b. Gives the maximum amount of the product which is required
c. Is taken in same quantity in volume as other reactants
d. Gives the minimum amount of the product
- Q.25** Which is true about both acetic acid and oxalic acid
a. Equal molar mass
b. Same molecular formula
c. Different empirical formula
d. Equal percentage of carbon
- Q.26** Which statement is incorrect
a. One gram atom of sodium is equal to one gram of sodium
b. One mole of ion is equal to ninety-six gram of sulphate
c. One gram molecule of water is equal to eighteen gram of water
d. One formula unit mass of lime stone is equal to hundred gram of lime stone
- Q.27** CH_2O is the empirical formula of
a. Formic acid
b. Sucrose
c. Lactic acid
d. Ethanol
- Q.28** Which of the following is not concentration unit of solution
a. %age composition
b. Mole fraction
c. Molarity
d. Molar volume
- Q.29** Combustion analysis is used to determine the _____ of an organic compound in i.e. hydrocarbons
a. Molecular formula
b. Empirical formula
c. Structural formula
d. Lewis structure
- Q.30** 20g NaOH is dissolved per dm^3 of the aqueous solution, its molarity will be
a. 0.5M
b. 1.0M
c. 0.25M
d. 0.1M
- Q.31** Which of the following terms is used for 238g of uranium
a. 1g molecule
b. 1g atom
c. 1g ion
d. 1g formula
- Q.32** 23g of sodium and 24g of magnesium have equal _____ in them
a. Mass
b. Number of protons
c. Number of atoms
d. All of these
- Q.33** Total number of electrons present in 34 g OH^- are



- a. $9 N_A$
c. $10 N_A$
- Q.34 Molarity of 25% (w/v) NaOH solution is**
a. 2.5 M
c. 5.0 M
- Q.35 720g of glucose contains how many moles of glucose**
a. 2
c. 4
- Q.36 Number of moles of solute dissolved per dm^3 of solution is called**
a. Molarity
c. Molality
- Q.37 The number of atoms in one gram atom of an element is**
a. N_A of atoms
c. N_A of molecules
- Q.38 An unknown compound has empirical formula CH_3O . Its molar mass is 62g/mole. The compound may be**
a. $\text{CH}_2(\text{OH})\text{CH}(\text{OH})\text{CH}_2(\text{OH})$
c. $\text{CH}_2(\text{OH})\text{CH}_2(\text{OH})$
- Q.39 For stoichiometry calculations, we have to assume**
a. Mass of reactants is less than the mass of products
c. All the reactants are completely converted into products
b. Side reaction occurs
d. Reaction is reversible
- Q.40 For more than two components solution, we prefer units of concentration like**
a. Mole fraction
c. Molality
- Q.41 Quantitative relationship between reactants and products in a balanced chemical equation is known as**
a. Stoichiometry
c. Titrimetry
- Q.42 What will be volume of 2.5 moles of chlorine molecules occupy at STP.**
a. 22.414dm^3
c. 50.207dm^3
- Q.43 Eight gram of methanol contain.**
a. 4 gram "C" 3g "H" and 1g "O"
c. 3 gram "C" 1g "H" and 4g "O"
- Q.44 2.5 mole of NH_3 and 2.5 mole of SO_3 at same temperature and pressure have equal.**
a. Volume
c. Atoms
- Q.45 The efficiency of a chemical reaction can be determined with the help of _____**
a. Actual yield
c. Theoretical yield
- Q.46 While finding the relative atomic mass, which of the following standard is used to compare the atomic mass of chlorine (35.5 amu)**
a. Neon-20
c. Nucleon number
- Q.47 What is the mass of Al in 204g of Al_2O_3 ?**
a. 126g
c. 108g
- Q.48 One mole of ethanol and one mole of ethane have equal**
a. Mass
c. Number of electrons
- Q.49 58.5amu mass of NaCl called as**
a. Molecular mass
c. Ionic mass
- b. $18 N_A$
d. $20 N_A$
- b. 1.5 M
d. 6.25 M
- b. 6
d. 8
- b. Mole fraction
d. ppm
- b. N_A of ions
d. N_A of formula unit
- b. CH_3COCH_3
d. $\text{C}_2\text{H}_5\text{OH}$
- b. Molarity
d. ppm
- b. Spectrometry
d. Chromatography
- b. 56.035cm^3
d. 56.035dm^3
- b. 3 gram "C" 2g "H" and 3g "O"
d. 2 gram "C" 1g "H" and 5g "O"
- b. Molecules
d. All of these
- b. Expected yield
d. %age yield
- b. Carbon-13
d. Carbon-12
- b. 27g
d. 54g
- b. Number of atoms
d. Number of molecules
- b. Formula mass
d. Atomic mass



- Q.50** The amount of product obtained without performing an experiment is known as
- a. Expected yield
 - b. Calculated yield
 - c. Theoretical yield
 - d. All of these

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| | A | B | C | D | | A | B | C | D | | A | B | C | D | | A | B | C | D |
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Regards.Huzaiifa Saeed,Usama Sohail

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